USNA Math Department Colloquium

Video Compressive Sensing

Prof. Larry Carin (Duke University)

Date: Monday, 22 April 2013

Time: 1200-1250

Location: Chauvenet 110

Abstract: A Gaussian mixture model (GMM) based algorithm is proposed for video reconstruction from temporally-compressed video measurements. The GMM is used to model spatio-temporal video patches, and the reconstruction can be efciently computed based on analytic expressions. The GMM-based inversion method benets from online adaptive learning and parallel computation. We demonstrate the efficacy of the proposed inversion method with videos reconstructed from simulated compressive video measurements, and from a real compressive video camera. We also use the GMM as a tool to investigate adaptive video compressive sensing, i.e., adaptive rate of temporal compression.

About the Speaker: Prof. Carin is the Chair of the EE Dept at Duke University. In the past several years he has led a group at Duke which has carried out pioneering work in signal processing and analysis, especially in the area of compressive sensing and its applications to sensor design.